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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No: 6,783,761 B2  
Issued: August 31, 2004  
Patentees: Grimes et al.  
Title: CHIMERIC PEPTIDE IMMUNOGENS  
Serial No.: 09/848,834  
Examiner: P.N. Huynh  
Art Unit: 1644

Certificate  
OCT 01 2004  
of Correction

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8	
I hereby certify that this paper is being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
Algis Anilionis	36,995
Attorney Name	PTO Reg. No.
<i>Algis Anilionis</i>	9/29/04
Signature	Date of Signature

Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT  
FOR PTO MISTAKE [37 C.F.R. §1.322(a)]

1. It is noted that printing errors appear in the referenced patent which are attributable to the Office.
2. The exact page and line number(s) where the error(s) is/are shown correctly in the application file is/are:

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Column and Line Number of Issued Patent	Location in Application File Where the Error is Shown Correctly
<u>Claim 1</u> Line 7: "circumsporozoitc," should read --circumsporozoite--.	Amendment filed March 5, 2004, page 4, former claim 23.
<u>Claim 1</u> Line 12: "immunonmimic" should read --immunomimic--.	Amendment filed March 5, 2004, page 4, former claim 23.
<u>Claim 2</u> Line 3: "T-lymphocytc" should read --T-lymphocyte--.	Amendment filed March 5, 2004, page 4, former claim 24.
<u>Claim 4</u> Line 43: "immunomimic is peptide" should read --immunomimic peptide--.	Amendment filed March 5, 2004, page 4, former claim 26.
<u>Claim 5</u> Lines 2-3: "amino terminal" should read --amino-terminal--.	Amendment filed March 5, 2004, page 4, former claim 27.
<u>Claim 6</u> Lines 8-9: "SEQ ID NO; 20." should read --SEQ ID NO: 20.--	Amendment filed March 5, 2004, page 5, former claim 28.
<u>Claim 11</u> Line 5: "SEQ ID NO; 14." should read --SEQ ID NO: 14- - .	Amendment filed March 5, 2004, page 5, former claim 30.

3. Patentees request that the issuance of a Certificate of Correction be expedited in accordance with the PTO's policy for expediting issuance of Certificates of Correction, as outlined in the PTO notice, issued August 21, 2002 entitled "Expedited Issuance of Certificates of Correction when the Error is Attributable to the United States Patent and Trademark Office." In support of the requested corrections, Patentees are attaching copies of the relevant pages from the application file with this Request.

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4. No fee should be due in connection with this communication. However, if a fee is deemed to be due, the Commissioner is authorized to charge such fee to Deposit Account No. 23-1703.

Dated: September 29, 2004

Respectfully submitted,



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Enclosures

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## UNITED STATES PATENT AND TRADEMARK OFFICE

### CERTIFICATE OF CORRECTION

PATENT NO : U.S. Patent No. 6,783,761 B2  
DATED : August 31, 2004  
INVENTOR(S) : Grimes et al.

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

#### Claim 1

Line 7: "circumsporoitoic," should read --circumsporoitoic--.

#### Claim 1

Line 12:

"immunonmimic" should read --immunomimic--.

#### Claim 2

Line 2: "T-lymphocyt" should read --T-lymphocyte--.

#### Claim 4

Line 3:

"immunomimic is peptide" should read --immunomimic peptide--.

#### Claim 5

Lines 2-3:

"amino terminal" should read --amino-terminal--.

#### Claim 6

Lines 8-9: "SEQ ID NO; 20" should read --SEQ ID NO: 20--.

#### Claim 11

Line 5: "SEQ ID NO; 14" should read --SEQ ID NO: 14--.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,783,761 B2

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No. of additional copies

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(Certificate of Correction (PTO/SB/44) [14-3]—page 1 of 1)

-continued

&lt;400&gt; SEQUENCE: 20

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Xaa His Trp Ser Tyr Gly Leu Arg Pro Gly Ser Ser Gly Pro Ser Leu
1      5      10      15
Asp Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe Asn
      20      25      30
Val Val Asn Ser Ser Ser Gly Pro Ser Leu His Trp Ser Tyr Gly Leu
      35      40      45
Arg Pro Xaa
      50

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What is claimed is:

1. A synthetic immunogen for inducing specific antibodies against GnRH comprising:

- (i) a promiscuous helper T-lymphocyte epitope selected from the group consisting of SEQ ID NO: 8 of measles virus protein F (MVP-F), SEQ ID NO: 2, SEQ ID NO: 4 of tetanus toxoid (TT), and SEQ ID NO: 3 of malaria circumsporozoite protein (M-CSP), fused through
- (ii) a spacer peptide selected from the group consisting of Gly-Pro-Ser-Leu (SEQ ID NO: 5), Ser-Ser-Gly-Pro-Ser-Leu (SEQ ID NO: 6), and Ser-Ser-Gly-Pro-Ser-Leu-Lys-Leu (SEQ ID NO: 7) to
- (iii) a GnRH immunomimic peptide comprising either the amino acid sequence of SEQ ID NO: 1, or amino acids 2-10 of SEQ ID NO: 1.

2. The synthetic immunogen of claim 1, wherein the T-lymphocyte epitope is fused through the spacer peptide to the amino-terminus or the carboxy-terminus of the GnRH-immunomimic peptide.

3. The synthetic immunogen of claim 2, further comprising a second GnRH immunomimic peptide comprising either the amino acid sequence of SEQ ID NO: 1 or amino acids 2-10 of SEQ ID NO: 1 wherein the second GnRH immunomimic peptide is fused at its carboxy-terminus or its amino-terminus through a spacer peptide to the T-lymphocyte epitope.

4. The synthetic immunogen of claim 1 wherein the T-lymphocyte epitope is fused through a spacer peptide to the amino-terminus of the GnRH-immunomimic peptide.

5. The synthetic immunogen of claim 1 comprising a GnRH-immunomimic peptide having an acetylated amino terminal glutamic acid or an amidated carboxy-terminal glycine.

6. A synthetic immunogen for inducing specific antibodies against GnRH comprising a promiscuous helper T-lymphocyte epitope fused through a spacer peptide to a GnRH immunomimic peptide selected from the group consisting of the peptide defined by SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, or SEQ ID NO: 20.

7. The synthetic immunogen of claim 6, wherein the synthetic immunogen is the peptide defined by SEQ ID NO: 10 or SEQ ID NO: 11.

8. A combination of synthetic immunogens for inducing specific antibodies against GnRH comprising at least two different synthetic immunogens selected from the group consisting of the peptide defined by SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, or SEQ ID NO: 20.

9. The combination of synthetic immunogens according to claim 8, comprising:

(i) the synthetic immunogen defined by SEQ ID NO: 10; and

(ii) the synthetic immunogen defined by SEQ ID NO: 11.

10. An injectable pharmaceutical composition comprising the synthetic immunogen of claim 1, and a pharmaceutically acceptable carrier.

11. The injectable pharmaceutical composition of claim 10, comprising a synthetic immunogen selected from the group consisting of the peptide defined by SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, or SEQ ID NO: 20; and a pharmaceutically acceptable carrier.

12. The injectable pharmaceutical composition of claim 11, comprising the synthetic immunogen defined by SEQ ID NO: 10 or SEQ ID NO: 11; and a pharmaceutically acceptable carrier.

13. An injectable pharmaceutical composition comprising the combination of synthetic immunogens of claim 8, and a pharmaceutically acceptable carrier.

14. The injectable pharmaceutical composition of claim 13, comprising:

(i) the synthetic immunogen defined by SEQ ID NO: 10;

(ii) the synthetic immunogen defined by SEQ ID NO: 11; and

(iii) a pharmaceutically acceptable carrier.

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